RETURN

To an ADDRESS of the SENATE dated 24th April, 1874; For copies of all instructions given to any Engineer or other person to examine into the practicability of a mixed Land and Water Trans-continental Communication with British Columbia; and for copies of any Reports received from such Engineer or other person; and for copies of any other Reports or Papers on the subject of the feasibility of using the waters of the Saskatchewan River for navigation purposes during a portion of the year.

By Command.

R. W. SCOTT,
Secretary of State.

DEPARTMENT OF SECRETARY OF STATE,
OTTAWA, 7th May, 1874.

(Copy.)

OTTAWA, May 7, 1874.

SIR,—I am directed to transmit to you the enclosed Return relative to a water communication between the Red River, Lake Winnipeg and the Saskatchewan by means of a canal, called for by an Address of the Senate, dated the 24th ultimo.

I have the honor to be, Sir,
Your obedient servant,
F. BRAUN.
Secretary.

E. J. Langevin, Esq.,
Under-Secretary of State,
Ottawa.

OTTAWA, 9th February, 1874.

SIR,—I have the honor to draw your attention to the result of a preliminary survey which I made in November and December last, for the purpose of discovering a navigable route from Fort Garry to the Rocky Mountains.

Different reports published in 1859 allude to these routes.

Among other projects then spoken of was to render the Assiniboine and Quapelle Rivers navigable by bringing the south branch of the Saskatchewan into Quapelle Valley.

With a view of studying this idea, I followed the Assiniboine River 140 miles up from Fort Garry; but I am convinced that the works to be performed on this portion alone would be by far too expensive.

It was also suggested to use Lake Winnipeg and the River Saskatchewan, but the Grand Rapids, which interrupts their communication, would need a very expensive canal, built altogether through the rock, which would seem to me a great objection, on account of its heavy cost, and would moreover open a navigation of 260 miles upon Lake Winnipeg, whose surroundings are almost sterile, and altogether unfit for colonization and commerce.

I take the liberty to submit to you a project of navigation, of which I have made a special study, and which seems to me preferable and less expensive than the two others above mentioned.

A far more advantageous navigation would be opened by using the following rivers: Assiniboine, Long Lake, Lake Manitoba, Lake Winnepegosis and the Saskatchewan, and I am convinced that the sale of lands alone would exceed the cost of canal works, which would consist:—

1st. To improve the River Assiniboine, which must be used for forty miles, the approximate cost would not exceed $20,000.

2nd. A canal should be constructed to connect the River Assiniboine with Long Lake. There being only 1 $\frac{77}{100}$ feet of difference in the level, the cut to be made through clay would not be considerable.

3rd. The navigation of Long Lake is 8½ miles, giving an average depth of from five to fifteen feet. The Long Creek, 2½ miles long and about forty feet wide, should be deepened a few feet.

At this point, I have two routes to suggest—A and B.

"A" needs only an easy cut of 5½ miles through the plain, this cut (as indicated on the map), leads to a gully which would only require some few feet deepening, and then reaches a deep creek which leads to Lake Manitoba.

"B" commences by a cut of 3½ miles in length (similar to that of "A"), and leads to a gully of six miles, which would need deepening. Between this gully and Portage Creek, one and a half a mile only remains to be cut before reaching Lake Manitoba.

4th. Manitoba Lake offers an easy navigation for 120 miles, and would reach Lake Winnipegosis by a cut in the plain of two miles.

5th. Lake Winnipegosis, which is navigable for one hundred miles, would join Cedar Lake by a cut of 3½ miles in the plain.

From Cedar Lake we run up the Saskatchewan, where navigation is so advantageous, that the Hudson's Bay Company is now constructing two splendid steamers to run as far as the Rocky Mountains, for the purpose of supplying their forts. It remains for me, Sir, to state, that the approximate difference of level between Cedar and Winnepeg Lakes, is about sixty feet, and that between the latter and Long Lake forty feet, on a length of nearly seventy miles.

It is easy to ascertain that these cuts through the plain would cost very little, and would require but twenty feet of dam works.

I further humbly submit that the regular survey, together with the maps and estimates, in connection with this great work, can be completed and submitted to you within two months and a half from the present date; and, before closing, I earnestly recommend this exploration to your favorable consideration.

I have the honor to be, Sir,
Your most obedient servant,
(Signed,) E. P. BENDER.

To the Hon. Alexander Mackenzie,
Minister of Public Works,
Ottawa.

(Copy.)

OTTAWA, 28th March, 1874.

SIR,—I have the honor to inform you that I am in receipt of a communication from A. H. Vaughan, P.L.S., covering a communication to yourself, which he directs me to forward, and which I now have the honor to enclose.

I have the honor to be, Sir,
Your obedient servant,
(Signed,) JOHN SCHULTZ.

The Honorable
The Minister of Public Works,
Ottawa.

WINNIPEG, PROVINCE OF MANITOBA.

SIR,—I have resided in the Province of Manitoba for nearly two years, during which time I have been engaged in the survey of Dominion lands in various parts of the Province, as well as in the City of Winnipeg. I have a considerable family, and intend with them to make this Province our permanent home. I therefore feel a deep interest in its development and progress, and have devoted much time and attention to the means by which those ends are to be gained.

Observing from some remarks of yours in the papers that the Government take a lively interest in the welfare of this Province, and are considering a scheme for using the waters between the latter and Lake Superior for intercommunication, and those situate westward between this city and British Columbia, I would respectfully beg leave to offer a few suggestions upon that and other subjects connected with the requirements of the Province for consideration by the Government, more particularly upon the extension of water communication westward.

There was, heretofore, under the consideration of the public—to which the Government, I believe, gave some attention—a plan for joining the navigable waters of the Saskatchewan with Red River, at this city, by way of Lake Manitoba and the Assiniboine River. It is said that there are only four miles of land which separate the navigable waters of the Saskatchawan at a point above the Grand Rapids on that river from those flowing into Lake Manitoba. From Lake Manitoba it was proposed to make a canal to the Assiniboine at a point some sixty miles west of this city; and from thence improve the navigation of that river to Red River. Further observations of the Assiniboine River have convinced almost every one—an opinion in which I concur—that on account of the scanty volume of water in that river, and its sinuous course, this plan is quite impracticable; and part of my object in making this communication is to show what I consider a more feasible route.

In the course of my operations I surveyed the Red River from a point about ten miles below this city to Lake Winnipeg at the south end, a distance of between 30 and 40 miles, and traversed the west coast of the Lake, northerly, about 60 miles.

The Red River is navigable for large river steamers from the Lake upwards, for about 30 miles, where there is a rapid which is quite an obstruction. From this rapid to the town there are several shoals and some boulders. The Government have heretofore made several appropriations, and spent considerable sums of money in removing boulders. This has improved somewhat the navigation; but I consider, as do some of the pilots and others interested in the navigation, that the benefits thus attained are not commensurate with the outlay. It is plain to an observer that when large boulders lie scattered across a river at right angles to the flow, they obstruct the latter, and tend to keep the water higher than if the boulders were taken out of the river, or removed into a line with the flow.

In the former case, they impede the flow; in the latter, the water will be lowered and made shallow, and rapids will be created where none were before.

In order to rectify the latter effect they have made at the rapids a work which they call a "wing dam," to impede the flow, and turn the water into the channel. It is the opinion of the best pilot on the river as of others,—that the velocity of the water in the

channel will be so much increased by the work in question, that it will be very difficult, if not impossible, to ascend the rapids with boats as formerly. Now, I consider that the best and cheapest way to improve the navigation is to make a thorough and permanent work at once by the building of locks, which may be done at comparatively small cost, the bottom of the river being a ledge of rock, and the material for building being on the spot. Indeed it has been stated that the annual and proposed outlay for the removal of obstructions would more than pay the interest on the cost of the locks.

It is suggested by the pilot, whom I have mentioned, that by raising the water at the rapids six feet, it would flow back sufficiently to give enough depth of water at the shoals. My opinion is that it would be better to raise the water by a lock at the rapids about three feet, and about the same height at the shoals by the same means. I reckon that the two shallow locks can be built for about the cost of one deep one; and facilities can be more easily made for the passage of ice over them in the spring. The population of this city is *rapidly* increasing; and if there were enough houses to hold the increase, I should not wonder to see it doubled in one year. The city and open country far around must, in a very short time, draw its supplies of fuel and building material from Lake Winnipeg, where there is an abundance of wood both for fuel and for manufacture into the coarser kinds of lumber. There are also considerable quantities of pine on the shores of the Lake of the Woods and Rainy River that may be made into logs and run down Winnipeg River to the Lake, and there sawn into boards and shipped to this city. In addition to the supply of lumber and wood, there are, upon the shore and islands, the finest quarries of building stone that I have seen in any country. Indeed, if the improvements which I have indicated were accomplished, building stone could be laid down in the city at a price which would enable builders to construct cheaper with it than can be done either with brick or wood. Large quantities of lumber are now imported from the neighboring states, which involves the sending of large sums of money out of the country. If proper facilities are provided by the Government to manufacturers, by granting of timber berths and improvement of navigation, this Province can, in a very short time, more than supply itself with lumber. Cord-wood has been sold in the city the present winter for from four to eight dollars per cord; and lumber eight to ten inches square for four to fifty cents per foot, running measure, prices which are exorbitant, and which would be very much reduced by the improvements proposed. Lake Winnipeg is about 350 miles long, and 50 broad. As far as I have been able to explore, the shores and islands are well wooded, the waters abound with excellent fish, considerable portions of the lands are fit for settlement, and valuable minerals are known to exist in various localities. It will be seen that a vast commerce must naturally spring up where there exists so large a supply of material for its development; but to facilitate this it will be absolutely necessary to remove certain obstructions in the navigation of the Red River.

Having considered the plan for the improvement of the navigation of Red River, and shewn its utility, I would now call your attention to a scheme for uniting the water of Lake Manitoba with that of Lake Winnipeg by canal.

By reference to the map of the Province you will perceive that the distance between the south-end of Lake Winnipeg and Lake Manitoba is about forty miles, and at about three-fourths of the distance from Lake Winnipeg is situate Shoal Lake. I am now engaged in the survey of, and indeed about completed, the last four townships east of the principal meridian, within the Province—a distance of about twenty-four miles from the lake. A large proportion of the land is well wooded and of excellent quality, diversified by marshes of some extent, situate between belts of timber of much larger extent. From the lake, going west for about ten miles, the land rises almost imperceptibly to where there is what may be called "the summit," a low ridge about forty chains in breadth, cut by a deep ravine, through which flows a small brook; and which, so far as I have been able to ascertain, is the only source of drainage from the marshes between the ridge and Shoal Lake; indeed it is not known that there is any river or brook flowing out of Shoal Lake in any direction.

The whole distance, as far as I have surveyed, is almost a perfect level, so far as one can determine without the application of the instrument; the dry land being from two to three feet above the marshes, and the depth of moss and water in the marshes about two or three feet, resting upon a clay or gravel bottom. From the terminus of my survey to Shoal Lake, I have not the least doubt of the land being level, and of the character I have described: indeed I took some trouble to obtain that information, sending a man out to explore part of the distance.

The distance of Shoal Lake from Lake Manitoba is about ten miles; and from information, which I consider reliable, I have every reason to believe that the land is low and level. The level of Lake Manitoba must be considerably higher than Lake Winnipeg: and it is the opinion of persons who have explored near the lakes that it is higher than Shoal Lake.

Now, if it is desirable to unite the waters of Lake Manitoba with that of Red River for navigable purposes, the most feasible and least expensive plan would be from Lake Manitoba by way of Shoal Lake to the south-end of Lake Winnipeg by a canal, which I am of opinion may be constructed for about the same outlay that it would take to build and equip a railroad for an equal distance. The importance of public works in attracting settlers to new countries is too well known to need comment.

Judging from your remarks that you know the true engineering principle of using nature's gifts as far as possible in making works for man's benefit, I beg to leave you to judge if those I propose will not best do so in this vast fertile land, which is now ours to open up and cause to be occupied according to its great resources.

I have the honor to be, Sir,
Your obedient servant,

(Signed), A. H. VAUGHAN.

To the Honorable Alexander Mackenzie,
Minister of Public Works.

(Copy.)

DEPARTMENT OF THE INTERIOR,
DOMINION LANDS OFFICE,
OTTAWA, 30th March, 1874.

SIR,—I have the honor to acknowledge the receipt of your letter dated 13th instant, enclosing a report addressed to the Honorable Alexander Mackenzie, Minister of Public Works, upon a scheme for opening up a water communication between the Red River, Lake Winnipeg and the Saskatchewan, by a canal from the western shore of Lake Winnipeg, near the mouth of the Red River, through Shoal Lake into Lake Manitoba, and thence by Winnipegosis and the Cedar Portage into the Saskatchewan; and to state that, in accordance with your request, the same has been enclosed to the gentleman to whom it is addressed.

Your remarks on the topography of the country between Shoal Lake and Lake Winnipeg are interesting, and go to shew that there are special facilities for opening up a water communication over the route indicated by you.

I can hardly, however, agree with you in the opinion that the River Assiniboine is not capable of being utilized for navigation purposes. On the contrary, I think that with a reasonable expenditure, as compared with the expense of constructing a canal over the route to which you allude, a system of slack water navigation, well adapted to light draught steamers, could be put in operation for two hundred and fifty miles west of Fort Garry. In connection with this, a short canal from the Assiniboine into Portage Creek or some other point at the south-end of Lake Manitoba, which might be cheaply constructed, would at once put Fort Garry in communication with the Lakes Manitoba and Winnipegosis by the most direct route for navigation.

This, however, is merely an opinion of my own, and which might not be warranted by the report of skilful Civil Engineers.

I have the honor to be, Sir,
Your obedient servant,
(Signed,) J. S. DENNIS,
Surveyor-General.

A. H. Vaughan, Esq.,
Dep. Surveyor,
Winnipeg.